

We Claim:

1. A data output service method for rendering at an output device output content managed from an information apparatus, comprising:
  - obtaining by wireless communication from the information apparatus at least part of a document object relating to the output content;
  - obtaining at least part of an output device object with one or more attributes relating to the output device;
  - providing the document object and the output device object to a server application operated on a server that is distinct from the information apparatus and the output device, and generating with the server application output data relating to the output device; and
  - providing the output data to the output device for rendering the output content as the data output service.
2. The method of claim 1 further comprising obtaining payment information from the information apparatus corresponding to payment for the data output service provided at the output device.
3. The method of claim 1 in which the providing of the output data includes transmitting the output data to the information apparatus and delivering at the information apparatus the output data to the output device.
4. The method of claim 2 in which the payment information is provided automatically by the information apparatus.
5. The method of claim 2 in which the payment information is provided through the information apparatus as entered by a user in response to a prompt to enter payment information.
6. The method of claim 2 in which the payment information includes data output service subscriber information corresponding to a pre-arranged subscription to the data output service.
7. The method of claim 6 further comprising correlating the data output service subscriber information with a subscriber database that stores subscriber profiles with subscription payment information.
8. The method of claim 1 further comprising obtaining authentication

information from the information apparatus to authenticating permission for the information apparatus to access the data output service.

9. The method of claim 1 in which the information apparatus includes a portable computing device.

10. The method of claim 1 in which the output device includes a printer.

11. A data output service system for rendering at an output device output content managed from an information apparatus, comprising:

means for delivering a document object and an output device object to a server application operated on a server that is distinct from the information apparatus and the output device, the document object relating to the output content and the output device object having one or more attributes corresponding to the output device;

means for generating with the server application output data related to the output device for rendering the output content; and

means for delivering the output data to the output device for rendering the output content.

12. The system of claim 11 further comprising means for obtaining payment information from the information apparatus corresponding to payment for the data output service provided at the output device.

13. The system of claim 11 in which the means for delivering the document object and the output device object to the server application and the means for delivering the output data to the output device are included in an output controller associated with the output device.

14. The system of claim 13 in which the output controller is included in the selected output device.

15. The system of claim 13 in which the output device includes a display output control unit and the output controller is included in the display output control unit of the output device.

16. The system of claim 11 in which the output device is a printer.

17. The system of claim 11 in which the information apparatus includes a portable computing device.

18. The system of claim 12 in which the payment information is provided automatically by the information apparatus.

19. The system of claim 12 in which the payment information is provided through the information apparatus as entered by a user in response to a prompt to enter payment information.

20. The system of claim 12 in which the payment information includes data output service subscriber information corresponding to a pre-arranged subscription to the data output service.

21. The system of claim 20 further comprising correlating the data output service subscriber information with a subscriber database that stores subscriber profiles with subscription payment information.

22. The system of claim 11 further comprising obtaining authentication information from the information apparatus to authenticating permission for the information apparatus to access the data output service.

23. A method for receiving data output service for rendering at an output device output content managed from an information apparatus, comprising:

establishing a communication channel between the information apparatus and a selected output device;

providing at the information apparatus at least part of a document object and at least an indication of the selected output device to a server that is distinct from the information apparatus and the output device, the document object relating to the output content;

receiving at the information apparatus an output data associated with the rendering of the output content at the selected output device; and

sending the output data to the output device for rendering the output content as the data output service.

24. The method of claim 23 further comprising sending payment information from the information apparatus corresponding to payment for the data output service provided at the output device.

25. The method of claim 24 in which the payment information is provided automatically by the information apparatus.

26. The method of claim 24 in which the payment information is provided through the information apparatus as entered by a user in response to a prompt to enter payment information.

27. The method of claim 24 in which the payment information includes data output service subscriber information corresponding to a pre-arranged subscription to the data output service.

28. The method of claim 27 further comprising correlating the data output service subscriber information with a subscriber database that stores subscriber profiles with subscription payment information.

29. The method of claim 23 further comprising sending authentication information from the information apparatus to authenticating permission for the information apparatus to access the data output service.

30. The method of claim 23 in which the information apparatus includes a portable computing device.

31. The method of claim 23 in which the output device includes a computer printer.

32. A method for generating a device dependent output data acceptable for rendering at a selected output device, the device dependent output data corresponding to output content accessible at least partly by an information apparatus, the method comprising:

delivering at least part of a document object and at least part of an output device object to a device that is distinct from the information apparatus and the output device, the document object being associated with the output content and the output device object having one or more attributes corresponding to the selected output device; and

generating at the device the output data acceptable to the selected output device.

33. The method of claim 32 further comprising establishing a communication channel between the information apparatus and the selected output device; and

receiving at the information apparatus over the communication channel one or more attributes corresponding to the selected output device.

34. The method of claim 32 in which the device that is distinct from the information apparatus and the selected output device includes one of a server, a computing device in a network, or another computing device.

35. The method of claim 32 in which the generating of the output data includes at least partially one or more of a conversion operation and a raster image processing operation.

36. The method of claim 32 further comprising discovering the selected output device as one of one or more output devices that are discovered by the information apparatus as being available for rendering the output content.

37. The method of claim 32 in which the document object includes the output content.

38. The method of claim 32 in which the document object includes a pointer or reference to the output content.

39. The method of claim 32 in which an application in the device, distinct from the information apparatus and the selected output device, obtains the output content based on a pointer or reference to the output content included in the document object.

40. The method of claim 32 further comprising delivering the output data to the selected output device for rendering of the output content.

41. A method for generating device dependent output data acceptable for rendering at each of one or more selected output devices, the device dependent output data for each selected output device corresponding to an output content accessible at least partly by an information apparatus, the method comprising:

delivering at least partially a document object and one or more output device objects to one or more devices that are distinct from the information apparatus and the one or more selected output devices, the document object being associated with the output content, and the one or more output device objects having one or more attributes corresponding to each of the one or more selected output devices; and

generating at the one or more devices the device dependent output data associated with each of the corresponding one or more selected output device.

42. The method of claim 41 further comprising establishing a communication

channel between the information apparatus and one or more output devices.

43. The method of claim 42 further comprising:

receiving at the information apparatus over the communication channel one or more attributes corresponding to the one or more output devices; and

selecting at the information apparatus one or more output devices for rendering the output content based at least in part on the one or more attributes.

44. The method of claim 41 in which each of the one or more devices distinct from the information apparatus and the one or more selected output devices include one of a server, a computing device in a network, and another computing device.

45. The method of claim 41 in which the generating of the output data for each selected output device includes one of invoking, launching, calling, utilizing, and involving one or more applications.

46. The method of claim 41 in which the generating of the output data for each selected output device includes at least partially one or more of a conversion operation and an raster image processing operation.

47. The method of claim 41 further comprising discovering the selected output device as one of one or more output devices that are discovered by the information apparatus as being available for rendering the output content.

48. The method of claim 41 in which the document object includes the output content.

49. The method of claim 41 in which the document object includes a pointer or reference to the output content.

50. The method of claim 49 in which the one or more devices obtain the document object based on the pointer or reference to the output content included in the document object.

51. The method of claim 41 further comprising delivering the device dependent output data to each selected output device for rendering of the output content.

52. A data output method for rendering at a selected output device output content from an information apparatus, comprising:

establishing a communication channel between the information apparatus

and the selected output device;

receiving at the information apparatus output data from a device that is distinct from the information apparatus and the selected output device; the output data being related to the output content and associated with the selected output device; and

delivering the device specific output data from the information apparatus to the selected output device for rendering of the output content.

53. The method of claim 52 further comprising obtaining an output device object and a document object at the information apparatus, the document object being associated with the output content, and the output device object having one or more attributes corresponding to the selected output device; and

sending the document object and the output device object to the device distinct from the information apparatus and the selected output device for generating the output data.

54. The method of claim 53 in which the obtaining of the output device object includes obtaining information from a user input, from a communication with the selected output device, and from a default parameter or preference.

55. The method of claim 52 further comprising discovering the selected output device as one of one or more output devices that are discovered by the information apparatus as being available for rendering the output content.

56. The method of claim 52 further comprising selecting an output device compatible for receiving the output data.

57. The method of claim 52 in which the received output data is device dependent with respect to the selected output device.

58. The method of claim 52 further comprising conforming at the information apparatus the output data into a form more suitable for rendering at the selected output device.

59. A data output method for rendering at an output device output content from an information apparatus, comprising:

receiving at the information apparatus output data from a device that is distinct from the information apparatus and the selected output device, the output

data related to the output content and associated with an output device;

selecting an output device compatible for receiving the output data for rendering the output content;

establishing a communication channel between the information apparatus and the selected output device; and

delivering the output data to the selected output device for outputting the output content.

60. The method of claim 59 further comprising discovering the selected output device as one of one or more output devices that are discovered by the information apparatus as being available for rendering the output content.

61. The method of claim 59 in which the received output data is device dependent with respect to the selected output device.

62. The method of claim 59 in which the device is distinct from the information apparatus and the selected output device includes one of a server, a computing device in a network, and another computing device.

63. The method of claim 59 further comprising conforming at the information apparatus the output data into a form more suitable for rendering at the selected output device.

64. The method of claim 59 further comprising obtaining an output device object and a document object at the information apparatus, the document object being associated with the output content and the output device object having one or more attributes corresponding to the selected output device; and

sending the document object and output device object to the device distinct from the information apparatus and the selected output device for generating the output data.

65. The method of claim 64 in which the obtaining of the output device object include obtaining one or more information from a user input, from a communication with the selected output device, and from a default parameter or preference.